STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. Highlighted questions are supplemental to the standard SEPA checklist. These questions look at the proposed project in relationship to the surrounding landscape. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.wa.gov/dnr/ under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the attached forest practice application acres, or the actual timber sale acres.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **Lost Poles & PC** Agreement #: **73586**

2. Name of applicant: **Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Northwest Region
   919 N. Township St.
   Sedro –Woolley, WA 92824

   Contact: Candace Johnson
   Telephone: 360-856-3500

4. Date checklist prepared: **12/12/2002**

5. Agency requesting checklist: **Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. Auction Date: **04/26/2004** Planned contract end date (but may be extended): **10/21/2004**
   b. Phasing: **None**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Yes. However, this proposal is for a thinning and should not necessitate items a. through c. below in conjunction with this activity.

   Timber Sale
   a. Site Preparation: **None.**
   b. Regeneration Method: **None.**
   c. Vegetation Management: **None.**
   d. Thinning: **Additional thinning will occur in 12-15 years following completion of this proposal.**

   Roads: **Road developed for this sale will be utilized for future management activities in the area on State managed lands. Routine maintenance will be conducted periodically. Maintenance may include cleaning of ditches and culverts, as well as road grading to minimize erosion and failures.**

   Rock Pits and/or Sale: **Development of the rock source may take place as needed in conjunction with other timber sales. Rock source for this proposal is located along the BR-4611 road.**

   Other: **None.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐303(d) – listed water body in WAU: ☐ temp. ☐ sediment ☐ completed TMDL (total maximum daily load):
☐Landscape plan:
☐Watershed analysis:
☐Interdisciplinary team (ID Team) report:
☒Road design plan: **Available upon request from Northwest Region Office.**
☐Wildlife report:
☐Geotechnical report:
☒Other specialist report(s):
Hydrologist Memo dated January 2003 is available upon request at the Northwest Region Office.
Wildlife Biologist Comments dated January 2003 is available upon request at the Northwest Region Office.
☐Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):
☒Rockpit Plan: **Available upon request at the Northwest Region Office**
☒Other: **Forest Resource Plan Environmental Impact Statement, July 1992; Final Habitat Conservation Plan, 1997; Management Activity Summary/Checklist.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. **None known.**

10. List any government approvals or permits that will be needed for your proposal, if known.

☐HPA ☐Burning permit ☐Shoreline permit ☐Incidental take permit ☒FPA # ☐Other:

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

a. Complete proposal description: **This proposal area covers approximately 250 acres and was initiated as a partial cut harvest. There were three units associated with this proposal, initially. One unit was dropped from this proposal and will become part of a future timber sale instead. This is due to the type of timber to be removed, location, and need for better determination of stream types in and immediately adjacent to that unit. The remaining two units changed in size and shape after field location of unit boundaries and buffers.**

Sale of timber:
Estimated Volume: 1,125 MBF
Area in Acres: 185 acres
Largest Unit: 98 acres (unit 2)
Type of Harvest: Partial cut and thinning combination.
Logging System: Ground based an/or cable systems.
Landings: 4-6 landings are currently proposed for this project.

Roads
675 feet of road construction will take place with this proposal.

Rock Pits and/or sales:
An existing rock source will be used for this proposal that is located in the SE ¼ SE ¼, Section 3, Township 33 North, Range 05 East, W.M.

Special Forest Product Sales:
None.

Other Related Actions:
None.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Timber stand description pre-harvest:

Species	% Stand composition	Average No. Trees/Acre	DBH Range in inches
Unit #1			
western hemlock	**48**	**105**	**8-23**
western redcedar	**35**	**77**	**8-26**
Douglas-fir	**7**	**16**	**13-32**
red alder	**10**	**22**	**9-17**
Totals	**100**	**220**	**N/A**
Unit #2			
western hemlock	**68**	**187**	**8-26**
western redcedar	**29**	**81**	**8-30**
Douglas-fir	**1**	**2**	**25-31**
red alder	**2**	**6**	**10-11**
Totals	**100**	**276**	**N/A**

Trees in the proposal area consist of naturally regenerated 65-75 year-old second growth stands. These stands are primarily composed of western hemlock 14 inches dbh and 50 feet in height, western redcedar 12 to 24 inches dbh and 75 feet in height, minor components of Douglas-fir 25 inches dbh and 120 feet in height , and red alder 10 inches dbh and 50 feet in height. These stands have little structural diversity; one canopy layer is present and the presence of large snags is largely lacking, minus a few exceptions. For example, there is at least one 60-foot, 4-foot dbh snag in unit 2. There is a presence of large down logs in unit #2.

This proposed management activity is a two-unit partial cut and thinning combination harvest. A number of cedar trees will be removed as well as western hemlock and the majority of the red alder. The residual stands will retain the Douglas-fir component

as well as western hemlock and western red cedar trees to comprise 185 trees per acre, on average. The site will be harvested by means of ground based yarding systems. Only tracked yarding equipment will be allowed.

The primary objectives for this project are to generate revenue for the Forest Board Trust; to release the smaller western redcedar trees on site in order for these to become future commercial pole quality timber; to construct road for future State forest management activities; and to protect riparian functions and mitigate for wildlife habitat values of managed forest stands through no-harvest riparian leave tree buffer areas and reducing harvest to only a partial removal of the existing trees on site. As designed, this project is in compliance with the Habitat Conservation Plan (HCP), Forest Resource Plan, and Forest Practice Rules.

c. Road activity summary. See also attached forest practice application (FPA) for maps and more details.

Type of Activity	How many	Length (feet) (estimated)	Acres (estimated)	Fish Barrier Removals (#)
Construction		**675**	**0.25**	**0**
Reconstruction		**0**		**0**
Maintenance		**0**		**0**
Abandonment		**0**	**0**	**0**
Bridge Install/Replace	**0**			**0**
Culvert Install/Replace (fish)	**0**			**0**
Culvert Install/Replace (no fish)	**2**			

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See attached timber sale map. See also color landscape/WAU map on DNR website http://www.wa.gov/dnr/ under "SEPA Center.")

a. Legal description:
Timber Sale: Parts of Section 16, Township 33 North, Range 06 East, and Section 12, Township 33 North, Range 05 East, W.M.
Rock Pit: SE ¼ SE ¼, Section 3, Township 33 North, Range 05 East, W.M.

b. Distance and direction from nearest town (include road names):
The proposal is located approximately 17 miles northeast of Arlington, by road. The timber sale is accessible by means of Highway 9 north from Arlington to the Finn Settlement Road, then east on the Finn Settlement/Grandstrom Road to the Lake Cavanaugh Road, then east on the Lake Cavanaugh Road to the Bear Creek Mainline (BR-ML) forest gravel road to access unit 1. To access unit 2, continue east along the Lake Cavanaugh Road to the LH-ML forest gravel road, take the LH-ML road to the unit.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.wa.gov/dnr/ under "SEPA Center")

WAU Name	Sub-basin	WAU Acres	Proposal Acres
Nookachamps	**-**	**47, 428**	**0.25**
"	**Sub-basin 12**	**3, 837**	**0.25**
Cavanaugh	**-**	**29,423**	**185**
"	**Sub-basin 4**	**2,184**	**98**
"	**Sub-basin 9**	**2,445**	**59**
"	**Sub-basin 10**	**2,715**	**28**

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.wa.gov/dnr/ under "SEPA Center," for a broader landscape perspective.)

All timber harvesting portions of this proposal are located in sub-basins of the Cavanaugh WAU. There is minimal road construction associated with this activity. This sale has been designed to help lessen impacts to soils by limiting the use of ground base equipment to that which is tracked and by discontinuing operations during periods of unsuitable weather conditions when rutting may occur. The proposal includes the use of an existing rock pit in sub-basin 12 of the Nookachamps WAU. Harvest maps were used to estimate even-age harvest acreage for DNR lands in the WAUs.

The Cavanaugh WAU is comprised 29,423 acres of mixed ownership, including individual scattered residential parcels, aggregated residential parcels surrounding Lake Cavanaugh, industrial timberlands, and DNR managed lands. The largest mixed ownership is in forestlands. The DNR manages approximately 57% of the land in the WAU. During the last 25 years, 13% of the Cavanaugh WAU has been clearcut. The partial-harvest acreage to be harvested in this sale is located in the rain dominated zone and is not expected to impact the percentage of hydrologically mature DNR-owned lands in the WAU.

The Nookachamps WAU consists of residential parcels, small forestland ownership, industrial timberland, and DNR managed lands totaling 47,428 acres. The DNR manages approximately 30% of the overall WAU, including 65% of the land in sub-basin 12. Approximately 10% of sub-basin 12, of the Nookachamps WAU, has been harvested in the last 15 years or is currently being harvested on DNR managed lands. Currently, there are no scheduled DNR timber sales in sub-basin 12. Scars from very old de-glaciation landslides on the flanks of Cultus Mountain are visible in this WAU. Some scars are still settling today. A short section of the BR-46 Road (proposed for reconstruction with the Pine Mountain Logs timber sale) near the rock pit has had sporadic debris deposits from a head scarp of an old slide. Instability of this area may be contributed by road construction and possibly rock pit development from more than 60 years ago. This is indicated by aerial photos from 1947. Although the area above the road has shown signs of instability, past failures have only blocked access on the road. These failures have not delivered any sedimentation to any surface water or other public resource. Specific road designs for the current Pine Mountain Logs timber sale have been engineered for the reconstruction of the road to mitigate any further failures of the old head scarp. Current rock pit activities should not contribute to this feature. The pit associated with this sale will be used for construction and continued maintenance of roads associated with future management activities.

Future activities in the sub-basins include road building, rock pit expansion, silvicultural work, and timber harvesting. These activities will continue to follow Forest Practices Rules, HCP regulations, and the Forest Resource Plan. Honoring these regulations will help minimize environmental impacts.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (check one):

☐ Flat, ☒ Rolling, ☐ Hilly, ☒ Steep slopes, ☐ Mountainous, ☐ Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

Cavanaugh WAU:
The Cavanaugh WAU varies in landform from flat to mountainous with an elevation range of 393 to 3,966 feet and a mean elevation of 1,631 feet. Several mountains in the WAU include Mt. Washington, Table Mountain, Frailey Mountain, and Bald Mountain. Streams within the WAU flow into Pilchuck Creek or Lake Cavanaugh. Rainfall within the WAU averages 45 to 80 inches annually, with an average of 59 inches. In general, this WAU is in the western hemlock zone. Timber types range from hardwood to conifer. The low to mid-high elevations are populated with red alder, bigleaf maple, and/or cottonwood hardwood stands, and Douglas-fir, western hemlock, and/or western redcedar conifer stands. The higher elevations in the WAU contain conifer stands generally comprised of Pacific silver fir, western hemlock, and/or western redcedar.

Nookachamps WAU:
The Nookachamps WAU consists of rolling foothills, occasional rock outcrops, mountainous terrain, and valley bottoms with an elevation range of approximately sea level to 4, 027 feet and a mean elevation of 807 feet. The boundaries of the WAU follow the ridge line created by Cultus Mountain (3, 950 feet) west to Devil's Mountain. A low valley formed by the two mountains drains a series of lakes north into the Skagit River via Nookachamps Creek. The annual rainfall in the WAU ranges from 40-80 inches. In general, this WAU is in the western hemlock zone.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).
The timber harvest portion of the proposal is located in the central to western portions of the Cavanaugh WAU. Unit 1 lies in the southwestern portion of sub-basin 9 and the northwestern portion of sub-basin 10. Unit 2 lies in the northern portion of sub-basin 4. The harvest area contains slopes with an elevation range of 1,200 feet to 1,800 feet. Slope gradient varies from 0-45%. Rainfall averages 50-70 inches annually. Timber types are typical for the Cavanaugh WAU. The rock pit is located in sub-basin 12 of the Nookachamps WAU.

b. What is the steepest slope on the site (approximate percent slope)? **45% slopes are found on 5% of the proposed harvest area.**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
1948	**GRAVELLY SILT LOAM**	**3-30**	**99**	**INSIGNIFIC'T**	**LOW**
4789	**V.GRAVELLY LOAM**	**3-30**	**61**	**INSIGNIFIC'T**	**LOW**
4792	**MONTBORNE-RINKER-COMPLEX**	**30-65**	**18**	**MEDIUM**	**MEDIUM**
0596	**MUCK**	**0-3**	**7**	**INSIGNIFIC'T**	**LOW**

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.
Yes.

1) Surface indications:

Although there are no known surface indications of unstable soils in or immediately adjacent to the timber removal portion of this proposal, there is a rock slide near the existing rock pit that is to be used for this proposal. The rock slide covers approximately 200 feet of existing road. This portion of the road was reconstructed through the slide area with the Pine Mountain Log Timber Sale, but it will not be used for this proposal. The slide has been present for at least 50 years and may have formerly served as a rock pit. Currently, it has small trees growing on its surface. There are no streams associated with this feature and the slope becomes gentle below the slide.

2) Is there evidence of natural slope failures in the sub-basin(s)?

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Nookachamps

Numerous large, post-glacial landslides modified the topography on essentially the entire west side of Cultus Mountain. Those old landslides are largely responsible for present-day stream courses, micro-land forms, and local soil depth/drainage conditions on the mountainside. These areas are currently stable except where local slopes are being undercut by streams. Some bedrock exposures occur within the tributary drainages. There is some evidence, according to aerial photos, of slope failure in the Cultus Mountain region.

Cavanaugh

There is some evidence of small shallow slope failures (<0.2 acres) along some of the stream reaches in the Cavanaugh WAU. These are generally associated with stream reaches in steep draws that have formed by cutting through dense glacial till.

3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?

: ☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics
Associated management activity:

Some shallow rapid slope failures in high elevations may possibly be attributed to older timber harvest and road construction. See B.1.d.1 above.

4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s) ?
☒No ☐Yes, describe similarities between the conditions and activities on these sites:

5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.
All roads have been located outside of any unstable slopes. Some operations, such as ground base harvesting, will be restricted to the dry season and limited to slopes less than 25%. B.1.d.4. above.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 0**.25 acres** Approx. acreage new landings: **0.25** Approx. acreage rock pit fills:
Fill source: **Native Material**

c. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Some localized erosion could occur during road construction and log transportation activities. However, prudent road construction techniques and normal maintenance practices will minimize the amount of erosion. See B.1.h. below.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
Approximate percent of proposal in permanent road running surface (includes gravel roads):
Approximately less than 0.5% of the site will result in permanent gravel road at the completion of the proposal.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

All road will be constructed to meet or exceed Forest Practice standards. Appropriate drainage devices including culverts, drain dips, water bars, and ditching will be used as necessary to reduce surface erosion. In areas where soil disturbance has occurred, the appropriate erosion control measures will be used to prevent sediment from being transported, such as the placement of straw mulch or grass seed. Type 2, 3 and 4 streams as well as forested and nonforested wetlands will be protected with buffers. Felling and yarding of trees will generally be directed away from all stream channels. There is an equipment limitation zone that will be maintained along type 5 streams to exclude equipment from disturbing the ground within 30 feet of the channels. Ground base equipment will be limited to slopes less than 25%. These measures will minimize soil disturbance from falling/yarding operations.

A road plan for this proposal is available from the Northwest Region Office

2. **Air**

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.
No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by truck traffic. If slash is burned, it will be burned in adherence to the State's Smoke Management Program.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
Does not apply.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:
None.

3. **Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See attached timber sale map and forest practice base maps.)

There are 11 stream segments associated with this proposal as well a non-forested wetland and associated pond (type 2) and several forested wetlands. This includes five type 5 streams, five type 4 streams, and one type 3 stream. Watercourses in the proposal ultimately flow into Pilchuck Creek.

a) Downstream water bodies: **Bear Creek flows in to Pilchuck Creek, which flows in to the Stillaguamish River.**

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Non-Forested Wetland>1 acre and associated pond	**2**	**1**	**155**
Forested wetland>1 acre		**4**	**See description below.**
Unnamed	**3**	**1**	**155**
Unnamed	**4**	**5**	**100**
Unnamed	**5**	**5**	**0**

**Buffer widths for type 3 streams and wetlands greater than 1 acre are based on the 100-year site index height from the state soil survey information.*

c) List RMZ / WMZ protection measures including silvicultural prescriptions, road-related RMZ/ WMZ protection measures, and wind buffers.

No road construction will occur in RMZ/WMZ buffers.

Harvesting operations will occur adjacent to the type 5 streams in unit 2, but there is a 30-foot equipment limitation zone required along the channel. Falling and yarding away from the streams will be required where feasible.

The type 3 stream has a minimum of a 155-foot, no-harvest buffer. No wind buffer was applied to this type-3 stream, due to the fact that the stream is less than five feet wide and that the majority of the trees will be retained on site adjacent to the buffer.

The type 4 streams have a minimum of a 100-foot, no- harvest buffer.

The non-forested wetland and associated pond (type 2) adjacent to Unit #1 has a 155-foot buffer in place. No harvest will occur in the buffer. The four forested wetlands are identified on the ground; their perimeter is marked with blue special management tags. These forested wetlands will have some timber removed from within the tagged area. The removal trees are marked within the tagged forested wetland area. No equipment will be allowed on the wet ground. Since this is a partial cut the forested wetlands theoretically have a 155 foot buffer. No such buffers were marked in the units due to the fact that only a partial removal of the existing trees will occur within the units including the theoretical buffer areas. This is consistent with the approved HCP.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

☐No ☒Yes (See RMZ / WMZ table above and attached timber sale map.)
Description (include culverts): **The felling and yarding of timber will occur along the buffer of the wetland and associated pond (type 2) in Unit #1, but no closer than 155 feet in and adjacent to the forested wetlands, as well as along the type 3 and type 4 riparian buffers. See B.3.a.1.b. table for buffer sizes. The felling and yarding of timber will occur adjacent to the non-perennial stream channels.**

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. **Does not apply**.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)

☒No ☐Yes, description:

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

☒No ☐Yes, describe location:

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

☒No ☐Yes, type and volume:

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?
The sub-basin contains soils that are susceptible to surface erosion and/or mass wasting according to the state soil survey data. The soil survey data for soils on the harvest site indicate an insignificant to medium potential for mass wasting and a low to medium potential for surface erosion, see B.1.c above. Slopes in the proposal area are subject to local surface erosion where surface soils are disturbed. Some soil disturbance is anticipated in conjunction with yarding and road construction activities. Surface erosion control/prevention measures discussed in B.1.h. would minimize or prevent delivery to surface waters. There is little potential for eroded material to enter surface waters as a result of activities associated with this proposal.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?

☐No ☒Yes, describe changes and possible causes: **At the WAU level, there is evidence of accelerated aggradations of channels at the base of hillslopes and channel scouring at the upper reaches of streams with changes in the quantity of LOD in the channels as well as changes in the channel attributes. These changes are associated with debris flows.**

9) Could this proposal affect water quality based on the answers to the questions 1-8 above.

☐No ☒Yes, explain: **There should be little affect upon the water quality in area of the proposal as well as to downstream resources. Also, yarding and log transportation will be restricted during unfavorable weather conditions so as to reduce the potential of impacting water quality.**

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?

WAU	sub-basin(s)	Road miles per square mile
Cavanaugh WAU	**-**	**4.0 miles per section**
“	**Sub-basin 4**	**3.8 miles per section**
“	**Sub-basin 9**	**3.4 miles per section**
“	**Sub-basin 10**	**6.6 miles per section**
Nookachamps WAU	**-**	**4.6 miles per section**
“	**Sub-basin 12**	**5.3 miles per section**

Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?

☒No ☐Yes, describe:

11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.

☐No ☒Yes, approximate percent of WAU in significant ROS zone:

9% of Nookachamps WAU

Approximate percent of sub-basin(s):

41% of sub-basin 12 (Nookachamps)

Only the rock pit associated with this proposal is located within a rain-on-snow zone.

12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is(are) rated as hydrologically mature?

Sub-basin 12 of the Nookachamps WAU: 79% of DNR lands within the sub-basin is designated as hydrologically mature.

Hydrological maturity on non-DNR SROS lands within the sub-basin cannot be accurately ascertained, and for this reason has not been considered in this analysis. The DNR manages 65% of this sub-basin.

13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?

☒No ☐Yes, describe observations:
Cavanaugh WAU

14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

Due to the partial-harvest nature of the proposal it is not expected to negatively influence peak flow. See also A.12.c, B.3.a.11, and B.3.a.12.

15) Is there a water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?

☒No ☐Yes Possible impacts: **Due to the partial-harvest nature of the proposal, protective measures being employed, and the remote location of the proposal, negative effects on downstream or downslope water resources are not expected.**

16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts**.**

This project should have minimal influence on peak flow. The project will retain trees on site (see B.4.b.2), which will assist in the continued infiltration of water during storm events, mitigating the influence of removing timber off the site. Also, all perennial water sources were provided riparian buffers (see B.3.a.1.b above), which is a retaining of green trees in the proposal site in addition to those counted in B.4.b.2. All roads will be constructed to meet or exceed Forest Practice standards. Also, yarding and log transportation will be restricted during unfavorable weather conditions so as to reduce the potential of impacting water quality.

b. Ground Water:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known**. Channeling water through ditches and culverts emptying out onto the forest floor will increase surface saturation in a local area, but is not expected to increase ground water.**

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. **Insignificant amounts of oil and other lubricants could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed of on site.**

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result of this proposal?

☒No ☐Yes, describe:

a) Note protection measures, if any.
Due to the nature of resource protective measures of the proposal, there should be no affect on downslope or downstream ground water resources. See B.3.a.16 above.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe**.**
Storm water runoff intercepted by gravel roads will collect in road ditches and be diverted through cross drain culverts back to the forest floor. Runoff is not expected to flow into other waters, with proper placement of culverts.

2) Could waste materials enter ground or surface waters? If so, generally describe.
It is not expected that any waste materials will enter ground or surface waters in conjunction with this proposal.

a) Note protection measures, if any. **None**

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

4. **Plants**

a. Check or circle types of vegetation found on the site:

☒ deciduous tree: ☒alder, ☒maple, ☐aspen, ☐cottonwood, ☐western larch, ☐birch, ☒other: vine maple
☒ evergreen tree: ☒Douglas-fir, ☐grand fir, ☐Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine, ☒western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☐Sitka spruce, ☒red cedar, ☐ yellow cedar, ☐other:
☒ shrubs: ☒huckleberry, ☒salmonberry, ☐salal, ☒other: Oregon grape, azalea
☐ grass
☐ pasture
☐ crop or grain
☒ wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☐devil's club, ☐other:
☐ water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒ other types of vegetation: sword fern
☐ plant communities of concern:

b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)

This proposal will partially remove second growth conifer and deciduous trees on approximately 185 acres of conifer forest. Some alteration of shrubs and ground vegetation may occur during the course of harvest activity.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website http://www.wa.gov/dnr/ under "SEPA Center".)
Timber types immediately adjacent to the removal area are similar in species, age and structural diversity of the removal area. The stands are 65-75 years of age. Stands adjacent to proposed activity are naturally regenerated second growth western hemlock stands with components of western redcedar, Douglas-fir and red alder, except as noted in the following description.

The stand adjacent to Unit #1 to the southeast is comprised predominately of 8-year-old planted Douglas-fir trees. To the west and to the southwest (beyond the RMZ) of unit 1, there are approximately 8 trees per acre left as the stands were recently harvested. North of Unit #1, beyond the WMZ exists a non-forested open wetland.

The stands adjacent to Unit #2 to the south and south east are comprised predominately of approximately 10-14 year-old Douglas-fir trees. To the east/northeast side of unit 2, there are approximately 8 trees per acre left as the stand was recently harvested.

2) Retention tree plan:
This proposal is a thinning so an assortment of randomly scattered, individual leave trees will reside on site after harvest. Approximately 185 trees per acre on average will exist on site after the harvest is completed.

c. List threatened or endangered plant species known to be on or near the site.
DNR's TRAX System indicates no known threatened, endangered or special concern species on or near the proposal area.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

RMZ's and WMZ's will preserve existing vegetation along streams and wetlands (see above stream and wetland buffer descriptions, B.3.a.1.b, B.3.a.1.c). Residual trees will be present after harvest. Also, soils exposed due to road construction will be grass seeded.

5. **Animals**

a. Circle or check any birds and animals or unique habitats which have been observed on or near the site or are known to be on or near the site:

birds: ☐hawk, ☐heron, ☐eagle, ☒songbirds, ☐pigeon, ☐other:
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☐other:
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☒other: amphibians
unique habitats: ☐talus slopes, ☐caves, ☐cliffs, ☐oak woodlands, ☐balds, ☐mineral springs

b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species).
DNR's TRAX System indicates no known threatened, endangered or special concern species within the proposal area.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

c. Is the site part of a migration route? If so, explain.
☒Pacific flyway ☐Other migration route: Explain if any boxes checked: **All of Washington State is considered part of the Pacific Flyway. No impacts are anticipated as a result of this proposal being completed.**

d. Proposed measures to preserve or enhance wildlife, if any:

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

An assortment of trees will be left on the proposal site. The provision of RMZ and WMZ buffers should retain elements of the forest stand structure condition as seen prior to the harvest. The maintenance of leave trees in these buffer areas should help mitigate the impact of harvesting trees on site in the short term, by retaining undisturbed small ecological niches. The post-harvest residual stand of trees will retain structural elements in the interior of the proposal area to mitigate wildlife habitat values disturbed due to harvest activities. Also, the RMZ and WMZ buffers should preserve existing riparian functions, protecting riparian obligate species. See also, B.1.h, B.3.a.1.b, B.3.a.1.c, and B.4.b.2.

Species/Habitat: **Riparian areas** Protection Measures: **See above description**

Species/Habitat: **Second growth forest** Protection Measures: **See above description**

6. **Energy and Natural Resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.
Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
Does not apply.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
Does not apply.

7. **Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so describe.

There is minimal hazard due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer.

1) Describe special emergency services that might be required. **Does not apply.**

2) Proposed measures to reduce or control environmental health hazards, if any:
The timber purchaser will be required to have fire suppression equipment on site during the restricted fire season while harvest activity is ongoing. Also, the DNR employs seasonal fire fighting crews to reduce the response time period for the initial attack phase of wildfire suppression.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
Noise from log trucks and logging equipment will be present while operating during daylight hours.

3) Proposed measures to reduce or control noise impacts, if any:
None proposed. Hauling noise will be consistent with past activities in this area.

8. **Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? (Site includes the complete proposal, eg. rock pits and access roads.)
Forest management (timber production). Residential structures exist along the access roads and in the local community at Lake Cavanaugh.
b. Has the site been used for agriculture? If so, describe.
No.
c. Describe any structures on the site.
Does not apply.
d. Will any structures be demolished? If so, what?
Does not apply.
e. What is the current zoning classification of the site?
Commercial Forest.
f. What is the current comprehensive plan designation of the site?
Forest management.
g. If applicable, what is the current shoreline master program designation of the site?
Does not apply.
h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
Does not apply.
i. Approximately how many people would reside or work in the completed project?
Does not apply.
j. Approximately how many people would the completed project displace?
Does not apply.
k. Proposed measures to avoid or reduce displacement impacts, if any:
Does not apply.
l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The design of this project is consistent with current comprehensive plans and zoning regulations.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply.
b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None.
c. Proposed measures to reduce or control housing impacts, if any:
Does not apply.

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
Does not apply.
b. What views in the immediate vicinity would be altered or obstructed?

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☐No ☒Yes, viewing location:
Lake Cavanaugh Area and along the eastern portion of the Lake Cavanaugh Road.

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?

☒No ☐Yes, scenic corridor name:

3) How will this proposal affect any views described in 1) or 2) above?

This proposal is out of the view of any major corridor traveled by the public, due to the surrounding topographic features. However, the proposal is visible in the Lake Cavanaugh Area, but view from that area should not be affected due to the nature of the selective harvest.

c. Proposed measures to reduce or control aesthetic impacts, if any:
Due to the nature of the proposal, negative aesthetic impacts should be minimal, if any at all.

11. **Light and Glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Does not apply.
b. Could light or glare from the finished project be a safety hazard or interfere with views?
Does not apply.
c. What existing off-site sources of light or glare may affect your proposal?
Does not apply.
d. Proposed measures to reduce or control light and glare impacts, if any:
Does not apply.

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?
There are designated official recreational off-road-vehicle trails in the area. This leads to an array of recreational use in the area such as motorcycle riding, hiking, horseback riding, hunting, and mushroom and berry collecting.
b. Would the proposed project displace any existing recreational uses? If so, describe:
Recreational use would be limited in proposal vicinity only during active harvest operations.
c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

13. **Historic and Cultural Preservation**

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
None known.
b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
None.
c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)
None.

14. **Transportation**

Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
Interstate 5, Highway 530, Highway 9, Finn Settlement/Grandstrom Road, Lake Cavanaugh Road.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)? **No.**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
No. The distance to the nearest transit stop is approximately 17 road miles, located in the city of Arlington.

c. How many parking spaces would the completed project have? How many would the project eliminate?
Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
See A.11.c.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?
The transportation of logs is consistent with past usage of the transportation system in the surrounding area. There will be many (approximately 10-20) log truck trips per day during the active log transport period of the project. It may have minimal, but temporary, impact on the Finn Settlement/Grandstrom Road, Lake Cavanaugh Road, and Highway 9, but this would not be unusual for the area.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
None.

g. Proposed measures to reduce or control transportation impacts, if any:
Safe operation of vehicles will be encouraged.

15. **Public Services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
No.

b. Proposed measures to reduce or control direct impacts on public services, if any.
Gated roads. The harvest operator is required to have pump truck and fire-fighting tools on site during fire season. Operation/access is restricted during periods of extreme fire danger.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
Does not apply.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Does not apply.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by:_____, Date:_____

Reviewed by:_____, Date:_____

Approved by:_____, Date:_____